



Key facts

Retailers' Reference Guide



Key facts: Diamonds

- A diamond is the pure symbol of love.
- The term "diamond" without further specification exclusively implies "natural diamond" – a diamond of natural origin.
- The quality of a diamond is determined by the **4Cs** rule. They are: **Carat weight**, **Colour**, **Clarity** and **Cut**.
- The key thing to note is that no one C is more significant than another. A particular combination of the 4 Cs can be chosen to suit a particular budget, occasion, design or jewellery piece.
- CIBJO's Diamond Grading standard is ISO 24016.

Carat weight

Carat is the weight unit for diamonds. One carat (equivalent to 200 milligrams) can be divided into 100 "points". A 0.75 carat diamond may also be described as a 75-point or a $\frac{3}{4}$ carat diamond.



2 CT



1.5 CT



1.25 CT



1 CT



0.75 CT

75 points



0.50 CT

50 points



0.25 CT

25 points



0.10 CT

10 points

Colour

Diamonds are found in almost every colour of the rainbow, but colourless diamonds remain the most popular. There are several subtle colour-grades for colourless diamonds commonly reported as ranging from D to Z. Variations between each colour grades are so slight that the colour of a diamond must be graded by experts under standardized lighting conditions and compared against a diamond master set for accuracy.

	CIBJO	GIA
Colourless	Exceptional White + (D)	D
	Exceptional White (E)	E
	Rare White + (F)	F
Near colourless	Rare White (G)	G
	White (H)	H
	Slightly Tinted White (I/J)	I
J		
Faint yellow	Tinted White (K/L)	K
		L
Very light yellow	Tinted	M
		N
		O
		P
		Q
		R
Light yellow		S
		T
		U
		V
		W
		X
Y		
Z		

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Clarity

Every diamond is unique. Nature ensures that each diamond is as individual as the person who wears it. Naturally-occurring features namely inclusions or flaws provide a special fingerprint within the stone. Usually invisible to the naked eye, these tiny inclusions, such as minerals, appeared while the diamonds were forming in the earth.

The number, type, colour, size and position of these inclusions can affect the value of a diamond. However, many can only be seen by experts using a 10-power magnification loupe. Even with the loupe, the tiniest inclusions can be very difficult to find.

Flawless diamonds are rarer and thus, more expensive, but small inclusions do not affect the beauty or the brilliance of a diamond.

CIBJO's Diamond Grading standard is ISO 24016.

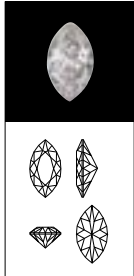
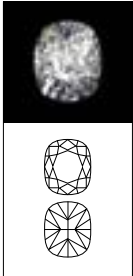
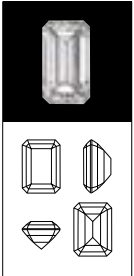
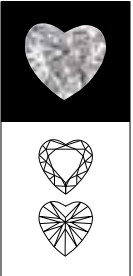
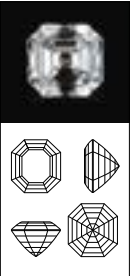
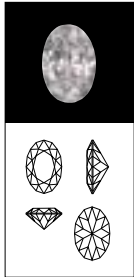
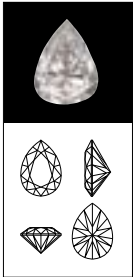
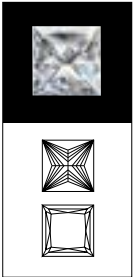
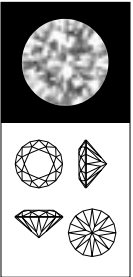
Clarity Grading Scales*	
CIBJO	GIA
Loupe Clean	Flawless
	Internally Flawless
VVS ₁	VVS ₁
VVS ₂	VVS ₂
VS ₁	VS ₁
VS ₂	VS ₂
SI ₁	SI ₁
SI ₂	SI ₂
P ₁	I ₁
P ₂	I ₂
P ₃	I ₃

Key:

- VVS** Very, very slightly included (very, very small inclusions)
- VS** Very slightly included (very small inclusions)
- SI** Slightly included (small inclusions)
- I** Included
- P** Piqué



* There are other clarity grading systems used by other laboratories around the world.

Cut	Treated diamonds	Artificial Products
The cut of a diamond is defined by its shape and its cutting style. The shape refers to the diamond's outline and its cutting style depends on the form and the respective positions of its facets. The cut of a diamond may be round, brilliant; octagonal step cut (also referred to as 'emerald cut'); pear-shaped, modified brilliant; square, fancy cut (also referred to as 'princess cut'), etc. Only the cut of round brilliant cut diamonds might be graded. CIBJO's Diamond Grading standard is ISO 24016. Marquise  Cushion  Emerald  Heart  Octagonal  Oval  Pear  Princess  Round  Trilliant 	Diamonds are treated in an attempt to improve their appearance. The fact that a diamond has been treated shall be disclosed. (CIBJO Diamond Book, clause "Treated Diamond").	Artificial products are partially or completely made by man. Artificial products can be synthetic diamonds, diamond imitations (or simulants), for example: glass, composite materials (or assembled) stones, reconstructed material, or any man-made material, including plastic. The clause "Synthetic diamond" of the CIBJO Diamond Book and the International Standard 'ISO 18323 – Consumer Confidence in the Diamond Industry' describe the nomenclature that specifically applies to synthetic diamonds. NOTE – A gemstone, other than a diamond that may be represented as a diamond, shall always be referred to by its mineral name, it shall not be described as an imitation of diamond (CIBJO Diamond Book, clause "Imitation or simulant of diamonds").

Key facts: Gemstones

- Most gemstones are minerals, which are natural inorganic solid materials, that have a specific chemical composition and a characteristic structure.
- Some gems, such as opal or natural glass, do not have an orderly crystal structure; these gems are amorphous.
- Some gems, such as lapis lazuli are rocks, meaning that they are coherent aggregates of mineral grains of one or more types.
- Some gems are organic or biogenic materials, meaning they come from plant or animal sources, such as amber, precious coral, ivory, tortoiseshell and pearls.
- To be called a "gem," any of the above-mentioned materials must embody three important traits: beauty, rarity and relative durability.

Gemstone properties: chemical, optical and physical

Properties of gemstones are a series of generally repeatable traits, which help distinguish gem varieties from one another, and gem species and groups from one another:

- **Chemical formula** – A written description of the chemical composition of a gem material. It includes the relative proportion of each of the atoms present, expressed using chemical element symbols.

- **Refractive Index** – A measure of the extent to which a light is bent as it enters or leaves a gemstone at an angle other than perpendicular to the surface. It is the ratio of the speed of light through air and the speed of light as it travels through a gemstone.

- **Birefringence** – The strength of double refraction measured as the numerical difference between the highest and the lowest refractive index values of a doubly refractive gemstone.

- **Specific Gravity** – Expresses the density of a gem, or its weight in relation to its size. It is the ratio of the weight of a gem material to that of an equal volume of water at 4 degrees Celsius.
- **Hardness** – A gem material's resistance to scratching. It contributes to durability, along with toughness and stability. In 1822, Frederick Mohs developed the Mohs scale, a numerical system for rating the relative hardness of minerals.

Natural gemstones covered in the CIBJO Retailers' Reference Guide



Alexandrite
and other
chrysoberyls



Amethyst



Aquamarine



Other beryls



Chalcedony



Citrine



Emerald



The feldspar
group



The garnet
group



Jade
and nephrite



Kunzite

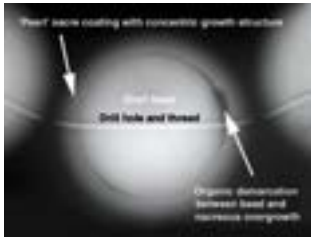


Lapis lazuli

Treated gemstones		Imitations	Synthetics	More information							
Some gem materials are treated to modify their appearance. Treatments are used in an attempt to improve colour, clarity, durability, or lustre and to accentuate phenomena. In some cases, a combination of processes might be utilised to achieve the desired result. Common gem treatments include bleaching, coating, dyeing, impregnation, foil backing, surface waxing, heating, irradiation, lattice diffusion, and filling of fissures and fractures or pits (cavities) with lead glass, wax, oils, polymers, resin or flux.		There are many products in the gem and jewellery business that look like gemstones but are not. These artificial products, which are sometimes called "simulants," are not described in the Retailers' Reference Guide gemstone section, but CIBJO defines them as products that imitate the appearance of gemstones, ornamental stones or organic substances without having their chemical composition and/or physical properties and/or their structure. Imitations can be natural gemstones of another variety, synthetic stones, glass, composite materials, assembled stones, pressed material, or any man-made material, including plastic and ceramic.	Many natural gemstones (such as ruby, sapphire, emerald, amethyst and spinel) have man-made counterparts that are manufactured in a laboratory or factory. These synthetic stones have essentially the same chemical, physical and optical characteristics as their natural counterparts. While synthetics are not covered in the <i>Retailers' Reference Guide</i>, it is important to follow CIBJO rules when discussing, selling or buying such products.	For more information about CIBJO standards and rules regarding treatments, artificial and imitation products, or synthetic stones, please download a free pdf copy of CIBJO's <i>Coloured Gemstone Bluebook</i> here: www.cibjo.org							
Natural gemstones covered in the CIBJO Retailers' Reference Guide											
											
Opal	Organic gems	Peridot	Unusual quartzes and chalcedony	Ruby	Sapphire	Spinel	Tanzanite	Topaz	Tourmaline	Turquoise	Zircon

Key facts: Cultured pearls

Types of pearls	Varieties of cultured pearls	
• Natural pearls are pearls accidentally formed in the interior of a mollusc without human intervention. • Cultured pearls are formed within molluscs with human intervention. This intervention should only instigate the formation of the nacre – the substance normally produced by the various “pearl oysters” for the formation of both the shell and pearls. • Imitation pearls are artificial products not formed in molluscs but manufactured by imitating the appearance, colour and other features of natural or cultured pearls. This is irrespective of whether physical or chemical properties are the same as natural and/or cultured pearls.	 Akoya cultured pearls are cultured in Japan, China and Vietnam using Akoya oysters (<i>Pinctada fucata (martensii)</i>). Compared with other “pearl oysters”, the Akoya oyster is rather small; hence the size of pearl produced is less than 10mm. The most popular sizes are 6 and 7mm.	 Black-lipped cultured pearls are cultured mainly in French Polynesia using Black-lipped pearl oyster (<i>Pinctada margaritifera</i>). They appear in the markets under the trade term of “Tahiti cultured pearl”. Common size is over 10mm, but recently smaller-sized pearls have been increasing. In addition to common natural grey or black colour, there is a wide variety of shades from purplish to greenish.
	 Silver/Gold-lipped cultured pearls are cultured in Australia, Indonesia and Philippines using Silver/Gold-lipped pearl oysters (<i>Pinctada maxima</i>). Australia produces large sized high quality pearls over 10mm while in Indonesia smaller sized pearls of below 10mm are also produced. The Philippines produce many golden pearls using Gold-lipped oyster.	 Freshwater cultured pearls are cultured in China, Japan and United States. Most are non-beaded cultured pearl. Chinese pearls cultured with “Triangle mussel” (<i>Hyriopsis cumingii</i>) are dominant. By improving the culturing technique, large, round and smooth-surfaced cultured pearls are produced. There is a wide variety of colours the three usual being white, orange and purple.

Cultured pearl quality factors		Pearl treatments
Size Sizes of cultured pearls are measured in millimeters (mm). Size range is dependent on pearl producing oyster species. • Akoya cultured pearl: 2-10mm • Silver/Gold-lipped and Black-lipped cultured pearl: 8-16mm • Freshwater cultured pearl: 2-13mm.	Lustre Lustre is defined by the quality of the reflected light. A lustrous pearl has a strong bright and sharp reflection. A low lustre pearl is not bright and its reflection is dull. The lustre of a pearl may be closely related to the homogeneity, light transmittance and thickness of the nacre. 	Any action by man that alters the appearance of a pearl or cultured pearl is considered to be a treatment. • Treatments that do not need to be declared: drilling, polishing, buffing, peeling and cleaning. • Treatments that must be declared: bleaching, coating, cutting, dyeing (tinting), filling, heating, irradiation, oiling, waxing and working.
Shape Perfectly round is highly valued. Shapes are divided into: <i>round</i>, <i>semi-round</i>, <i>oval</i>, <i>drop</i>, <i>button</i>, and <i>semi-baroque</i>.	Nacre thickness Degree of nacre coating of the beaded cultured pearls. It has some impact of their colour, luster and durability. X-rays are used to measure nacre thickness and assist in observing nacre quality. 	
Surface condition The surface of a cultured pearl is examined in terms of the number, size, kind and location of the imperfections. In evaluating the surface of cultured pearls, imperfections are taken into account – whether the pearl has a clean surface, one spot or many spots.	Colour A pearl's colour contains three basic components, hue, tone and saturation. Colour characteristics differ according to the mollusc species. • <i>Akoya cultured pearl</i>: Pink, green pink, silver pink, cream pink, white, green, cream, gold. • <i>Silver/Gold-lipped cultured pearl</i>: Silver, silver pink, pink, grey, cream, yellow, golden, white. • <i>Black-lipped cultured pearl</i>: Black, green, brown, blue, peacock, red. • <i>Freshwater cultured pearl</i>: Three basic colours (orange, purple, white). 	More information For more information about CIBJO standards and rules regarding treatments, please download a free pdf copy of CIBJO's <i>Pearl Bluebook</i> here: www.cibjo.org

Key facts: Precious metals

- A precious metal is a rare metallic chemical element which is of high economic value. - The best known precious metals are platinum, gold, silver and palladium. - Assaying is the process of measuring the metallurgical content of platinum, gold, silver or palladium in precious metals. There are numerous methods which can be used and the choice usually depends on how accurate the measurement needs to be as well as the cost. - Assaying can be carried out either by an assay office or by authorised manufacturers or other approved entities that vary country by country. Assaying is performed in order to determine if the purity is equal or better than that claimed by the maker. Once the purity has been determined, the hallmark will be stamped on the item to certify it.	Platinum	Gold	Silver	Palladium
				
	Platinum, chemical symbol Pt, is one of the rarest precious metals, found in only a few places – principally South Africa and Russia. Platinum will not fade or tarnish – keeping its natural white colour forever. Most platinum jewellery is either 90% or 95% pure, does not need rhodium plating and being hypoallergenic will not cause an allergic reaction. The density of platinum gives it a heft, its ductile nature allows craftsman to create the most intricate pieces, and its physical properties ensure that precious gemstones are held securely.	Gold is a rare metallic element. Its chemical symbol, Au, is short for the Latin word for gold, “Aurum”, which literally means “Glowing Dawn”. Pure gold has a bright yellow colour and is one of only two non-white metal elements, the other being copper. All other precious metals are white, silver or grey. White golds are gold alloys that look white rather than yellow. The white colour is achieved by careful choice of the alloying metals, which bleach the deep yellow of pure gold. White gold is often rhodium plated to insure a final white colour. Gold is also produced in a range of other colours.	Silver is a soft, white, lustrous transition metal and is used in currency, ornaments and jewellery. It has the highest electrical and thermal conductivity for a metal. Sterling silver is an alloy of silver containing 92.5% pure silver and 7.5% other metals, usually copper. Britannia silver is an alternative hallmark-quality standard containing 95.8% silver, often used to make silver tableware and wrought plate. Silver Jewellery is a very popular jewellery item today and is generally manufactured with 92.5% alloy. Extensive research is being performed around the world to minimize oxidation effects over time.	Palladium, chemical symbol Pd, is a metal within the platinum group metals, and considered a precious metal in its own right. As a naturally white precious metal, palladium is primarily used in jewellery as an alloy for whitening gold. Finished jewellery applications are primarily in wedding bands and larger necklaces and bracelets that make use of palladium’s lightness, nearly half the weight of platinum. Although naturally white like its sister platinum, palladium is not hypoallergenic.

Hallmarking	Common Control Mark																																																																																															
A hallmark, is a mark or series of marks struck on items made of precious metals – platinum, gold, silver and in some nations, palladium. Hallmarks are applied by an assay office or an authorised manufacturer or an approved entity according to countries and they guarantee a minimum purity or fineness of the metal. As a pre-requisite to official hallmarking, the maker or sponsor of a piece of jewellery must provide a responsibility mark and claim of suitability. Hallmarking systems differ from country to country. The Convention on the Control and Marking of Articles of Precious Metals (also known as "Precious Metals Convention", "Hallmarking Convention" or	"Vienna Convention") is an international treaty between Contracting States signed in November 1972. The Vienna Convention aims at facilitating the cross-border trade of precious metal articles. The Convention, which is based on the principle of independent, third-party control, has a scope strictly limited to the control of the precious metal content – not to health, security or other aspects of precious metals articles. More specifically, the articles which are assayed and found to be in conformity with the qualifying office of a signatory country receive a mark, known as the Common Control Mark.																																																																																															
Common Control Mark	<table><tr><th rowspan="2">RESPONSIBILITY MARK</th><th colspan="4">COMMON CONTROL MARK</th><th colspan="4">FINENESS (PURITY) MARK</th></tr><tr><th>Platinum</th><th>Gold</th><th>Palladium</th><th>Silver</th><th>Platinum</th><th>Gold</th><th>Palladium</th><th>Silver</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td>850</td><td>375</td><td>500</td><td>800</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>900</td><td>585</td><td>950</td><td>830</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>950</td><td>750</td><td>999</td><td>925</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>999</td><td>916</td><td></td><td>999</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>999</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> ASSAY OFFICE MARK <table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	RESPONSIBILITY MARK	COMMON CONTROL MARK				FINENESS (PURITY) MARK				Platinum	Gold	Palladium	Silver	Platinum	Gold	Palladium	Silver						850	375	500	800						900	585	950	830						950	750	999	925						999	916		999							999																																			
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States, which are party to the Convention, recognise that articles, which have been marked with the Convention "Common Control Mark" (CCM) and which are of a legal fineness, can enter their territory without additional control or marking. The CCM is the first international	hallmark and accepted not only in the Convention's Contracting States but also in other countries, where it is recognised as a "quality" symbol. The Convention makes it easier for quality precious metals articles, for which there is a high demand, to travel and cross borders. © HALLMARKING CONVENTION The chart illustrates the 20 countries that have signed up to the Vienna Convention. It does not mean they have compulsory hallmarking in their domestic market. Furthermore, 4 countries – Italy, Serbia, Sri Lanka and Ukraine – are presently in the process of acceding while others have shown interest.																																																																																															

Key facts: Responsible Sourcing

Responsible Sourcing is important to the entire jewellery industry, protecting consumer confidence in our industry and our products. All companies in the jewellery industry should ensure that their products are responsibly sourced, conflict free and that they respect fundamental human rights.

- The OECD has provided guidance for all industries, companies and sectors to ensure their supply chains are responsibly managed. This guidance means that companies should understand and undertake "due diligence" on their supply chains.
- This due diligence means that all companies should have a policy for responsible sourcing and communicate it to all suppliers.
- It also means that all companies should understand and keep information on their suppliers and understand their suppliers' responsible sourcing policies.



Core elements of Responsible Sourcing are:

- Each company should have a Responsible Sourcing Policy which includes policies on human rights and responsible sourcing.
- You should communicate your policy to your suppliers and include it in your terms of doing business.
- You should understand your suppliers and their responsible sourcing policies as much as possible.
- You should check your supply chain for potential risks.

